

Use of Carbon Bisulphide.

J. H. BEATTIE.

Bee-Supplies in Colorado.

M. A. GILL.

AMERICAN BEE JOURNAL

WEEKLY—\$1.00 A YEAR.

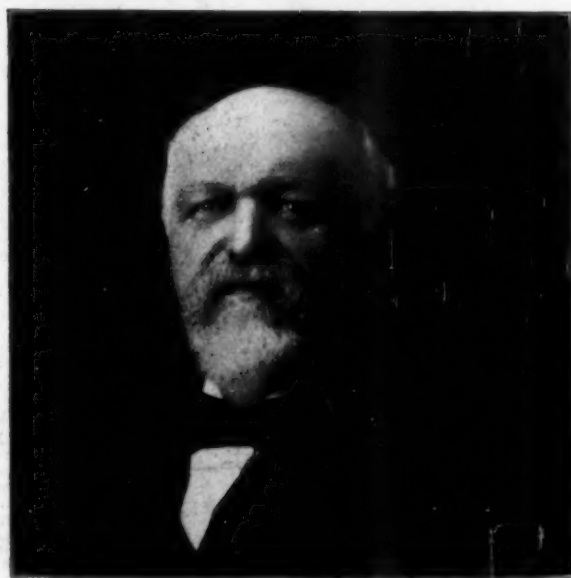
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44th Year.

CHICAGO, ILL., FEB. 4, 1904.

No. 5.

WEEKLY



C. H. W. WEBER—(See page 85.)

DANZENBAKER HIVE.

"FACTS ABOUT BEES"

A 64-page book written by Mr. F. Danzenbaker, giving a complete description of his famous hive and directions for using. Full of valuable information. Sent free on receipt of a two-cent stamp to pay the postage. Send for it.



O. L. HERSHISER.

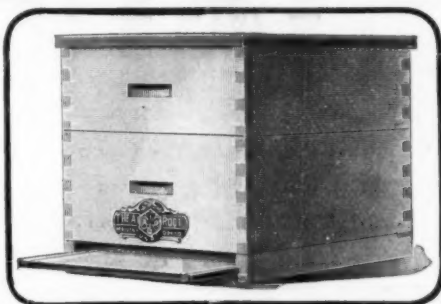
The Best Bee-keepers use it.

Mr. Hershiser, manager of the New York State apiarian exhibits at the Columbian Exposition, 1893, where he won credit for himself and State by his magnificent display of comb honey, was selected as superintendent of the apiarian exhibits at the Pan-American Exposition. Being an up-to-date bee-keeper, and having a keen interest in the latest apicultural appliances, he installed a trial apiary of 10 colonies of working bees, mostly Italians, but with some hybrids, and one colony of black bees. The last named made the best record, storing 111 pounds in a Danzenbaker hive.

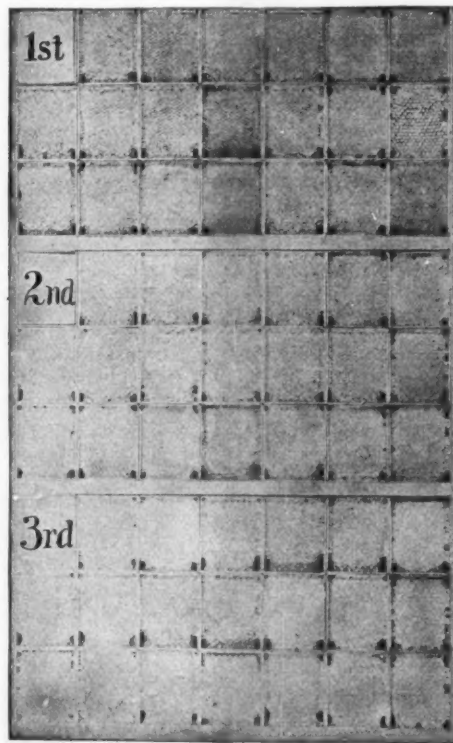
The Texas Honey Producers' Association has this day endorsed the 4x5 section super, and favor the Danz. style with H. S. separators. We feel sure we will have orders for you of from 1500 to 2000 Danz. supers.
THE HYDE BEE CO.
Floresville, Tex., Dec. 30, 1903.

I have kept bees three years, and owe my success to the Danzenbaker Hive. I shall as soon as possible send you a report of my honey crop. But one thing I know now, and that is, that one Danz. colony gave me over 100 lbs. first-class honey, while a ten-frame Dovetailed hive gave 25 lbs., and the Danz. winters in fine shape without feeding. Both hives had an equal footing.

JASON B. HOLLOPETER.
Union Bridge, Md., Oct. 26, 1903.



The great popularity of the Danz. hive has brought the shallow frame into prominence. It must be remembered that no other contains the essential points of the Danz.



PAN-AMERICAN PRIZE HONEY.

From a photo of the 60 prize Danz. sections produced in the State of New York.

First 20 sections, net weight 19 lbs., 11 oz.; stored in Danz. hives, awarded diploma and \$25.00.

Second 20 sections, net weight 19 lbs., 9 oz.; stored in Dan. hives, in the trial apiary at the Pan-American Exposition, awarded \$15.00.

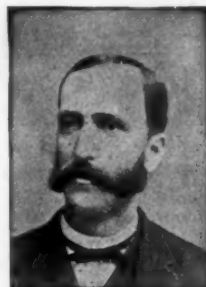
Third 20 sections, net weight 18 lbs., 13 oz.; produced in Danzenbaker hives, awarded \$10.00.

Danzenbaker Sample Hive Outfit for First Orders.

Five Danz. AD6 sample hives 4 put together ready for paint, including covers and bottoms; one brood-chamber fitted complete as a model, fittings for the other four in flat, with foundation for one inch starters..... \$7.00

Five Danz. 4M sample supers including sections and foundation-starters. All 5 supers are nailed, and one has inside fixtures in place as a model, the fittings for the other four in flat..... \$4.75

The Danzenbaker hive is kept in stock at all our branch houses and principal agencies all over U. S. Our bee-supply catalog for 1904 gives complete prices, and will be mailed promptly on request.



W. Z. HUTCHINSON.

The Choice of an Expert.

Mr. Hutchinson, Judge of Apiarian Exhibits at the Pan-American Exposition, editor of the *Bee-Keepers' Review*, and an enthusiastic and thoroughly posted bee-keeper, was, without doubt, the most capable man who could be selected judge of any thing pertaining to apiculture. His decisions are given greater value because he is fitted to speak from both scientific and practical standpoints.

The Danzenbaker Hive will, I think, take precedence over all others. I am delighted with it, as it is simple and easily manipulated.
R. H. FEPWORTH.
Pieternaritzburg, Natal, Nov. 30, 1903.

The Best Comb-Honey Hive.

I am very very much pleased that you are willing that I should recommend the Danzenbaker Hive. I have had a great many inquiries about it, and have not felt at liberty to recommend it over our regular hives. At first I was prejudiced against it, but the sales have increased without recommendations, and wherever I have sold they have bought again and praised the hive with extravagant claims, and I am forced to the conclusion that it is the BEST COMB-HONEY HIVE on the market.
J. B. MASON,
Manager North-eastern Branch,
The A. I. Root Co.

THE A. I. ROOT COMPANY,

BRANCHES:

Main Office and Works, Medina, Ohio, U. S. A.

BRANCHES:

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AMERICAN ESTABLISHED IN 1861 BEE JOURNAL THE OLDEST BEE-PAPER IN AMERICA

Entered at the Post-Office at Chicago as Second-Class Mail-Matter.

GEORGE W. YORK, Editor.

CHICAGO, ILL., FEB. 4, 1904.

Vol. XLIV—No. 5.

Editorial Comments

Carbon Bisulphide and Its Use.

Sulphur has played an important part with bee-keepers in the destruction of the larvæ of the bee-moth, albeit there is less need for it since the incoming of Italian bees. It seems likely, however, to lose its importance and give way to carbon bisulphide as a more effective insecticide. In this number appears an article which is quite full and instructive with regard to this drug, and although there may be nothing particularly new in the article, it will repay reading by those who are likely to use it.

The one particular danger in the use of carbon bisulphide should be kept fully in view: It is highly explosive. But there is no need to run any risk in this regard; keep away from it fire. Fire is not needed in its use, as it evaporates at ordinary temperatures, while sulphur can only be used by means of fire to produce the fumes, and care must be used to keep from burning up the building in which it is used. Carbon bisulphide has the pre-eminent advantage over sulphur, that it destroys eggs as well as larvæ. It does not discolor white comb, as sulphur sometimes does.

A pound of bisulphide is given for 1000 cubic feet of space; that would make a tablespoonful for about 27 cubic feet, or enough for 20 8-frame hive-bodies filled with combs, providing all is air-tight. In actual practice a spoonful may be used for four or five hives.

Paraguay as a Bee-Country.

The British Bee Journal copies from *The Field*, an article by John D. Leckie, in which Paraguay, in South America, is described as a field well worth entering by those of adventurous turn. The climate rivals that of Southern California; the bees can store during eight months of the year, and during the other four months they can find more or less flowers, so that it is only necessary to leave in the hives sufficient to tide over a possible ten days of wet weather.

The orange begins to bloom at the opening of the honey season, continuing in bloom for about two months, followed by numerous other flowers. "Orange trees are present everywhere in Paraguay; they grow wild in the woods in great abundance, and are, in fact, in many parts the commonest wild tree." The thermometer never sinks to the freezing point except sometimes in early morning, and rarely reaches 100 degrees. Compared with Australia, expenses of living and labor are much less, while prices for honey are higher. General farming is not lucrative, but stock-raising thrives, and may well be combined with bee-keeping.

Nothing is said as to society, and it is quite possible that a native of the United States might not feel entirely at home in Paraguay.

Overweight Honey-Packages.

While some are complaining of light-weight sections, W. Woodley complains in the British Bee Journal that so-called honey-jars hold more than a pound, as he found it took 28 pounds of honey to fill 26 jars just up to the neck. Possibly the heavier body of Mr. Woodley's honey had something to do with the case.

Election of the National Association.

As previously announced, no one received a majority of the votes necessary to elect a successor to Mr. E. R. Root as director of the National, thus leaving Mr. Root a hold-over. Having announced before the election that he would not serve if elected, he has now very properly sent in his resignation to the Executive Committee, which will choose his successor.

Fortunately, an incident of this kind is not likely to occur again, for the amendment to the constitution lately passed, if a like vote were to be taken again, would make Mr. Wm. McEvoy the director elected, as heretofore an election could only result where a candidate received more than half of all the votes cast, whereas it is now necessary only that he shall have the largest number of votes—in other words, the amendment makes necessary only a plurality vote, not a majority.

The Executive Committee have an easy task before them in the present case, as they have only to confirm the plurality vote received by Mr. McEvoy.

The amendment giving all the members of the Association an opportunity to vote for all the officers is an improvement. In so large a country as this the attendance at the annual convention must of necessity always be largely local, and in the choice of officers elected at such convention, there is some danger of local coloring, which will be eliminated by the present arrangement. It is to the credit of the majority of the members heretofore attending conventions, however, that so little of local sentiment has appeared in the choice of officers.

Abundance of Upward Ventilation in the Cellar.

Four years ago, as C. F. Smith relates in the *Bee-Keepers' Review*, a cover was moved half off one of his hives when being taken into the cellar, and in the spring the colony in that hive was in perfect condition, while all the rest were wet, moldy, diseased, and half dead. Since then he winters his bees without covers, although in a wet cellar, and has not lost a colony nor had moldy combs.

An Automatic Bee-Smoker.

For some time there has been in use in Europe a smoker arranged to run by clock-work. It takes about a minute to wind it up, and about 20 minutes for it to run down, providing it is allowed to run without stopping. But a little lever can be used to stop or start it at any time, so one winding may do for half a day or longer, according to the number of times it is allowed to act, and the length of time it is allowed to run.

Some of the transatlantic bee-keepers have spoken highly of it, but it has not come into notice in this country, although patented in the United States two years ago. The Editor of *Gleanings in Bee-Culture* has obtained one of the smokers, and speaks highly of the ingenuity of the invention, and thinks an expensive set of dies must be used in its manufacture. He further says:

This mechanical smoker sends out a very light blast of air—so light that it can scarcely be felt. The smoke can, however, be sent several inches from the nozzle, and perhaps it is far enough for a good many operations. It weighs, however, about three times as much as the average smoker, and the fuel capacity is only about a tenth of that of an ordinary standard bellows smoker. It would do very well for a small number of colonies; but for the average American apiarist I doubt if it would give general satisfaction. The cost of it will be

least five times as much as that of a common bellows smoker, I should judge from its general construction.

The tendency in this country has been steadily toward a larger smoker with capacity for a greater quantity of fuel. To go back to a smoker carrying only a tenth of the usual quantity of fuel would hardly be tolerated. Add to this the small blast and great cost, and Mr. Root is probably correct in thinking that such a smoker will not find general acceptance in this country.

That Honey and Water Problem.

An inquisitive member of the Journal family writes us as follows on this subject:

On page 30, J. E. Johnson says: "Crystals and dry substances do absorb moisture from the air, but the same law in chemistry which furnishes moisture for the air would take from, and not add to, any liquid." Please tell us what that law is.

He also tells us that honey becomes thinner in a moisture-laden atmosphere, not by the addition of moisture from the atmosphere, but by decomposition of the honey, that decomposition being favored by the presence of the moisture in the atmosphere. Now, suppose we have a sample of thick honey in a moisture-laden atmosphere at a temperature of 50 degrees. Then suppose we take a sample of the same honey and thoroughly mix with it one-fourth of its weight of water, and put it in ordinary atmosphere at 100 degrees. In the first case the moisture that favors decomposition can act on the surface, while in the second case it is thoroughly incorporated with the whole, and can act on all parts at once, thus favoring more rapid decomposition, while the higher temperature is also more favorable to decomposition. Now, please tell us: Will the second sample, in the higher temperature actually become thinner with greater rapidity than the first? and, if so, how much more rapidly? SUBSCRIBER.

Will Mr. Johnson kindly reply to the foregoing?

Visiting Apiaries Only Three Times a Year.

E. D. Townsend tells about it in the Bee-Keepers' Review. Extracting colonies pass the winter in chaff hives, or packed in chaff packing cases, each having 25 or 30 pounds of honey, are left untouched whether weak or strong, through spring and until June, when they are unpacked and upper stories put on. One apiary thus treated had only two more visits for the season, although he says he would prefer to visit them once a week.

Miscellaneous Items

Mr. Noah Thomas, of Horatio, Ohio, for many years a bee-keeper, died recently at the age of nearly 78 years. His apiary contained over 40 colonies. He was a regular reader of the American Bee Journal for many years.

The California State Bee-Keepers' Association held its annual meeting in Los Angeles Jan. 4 and 5. The officers elected for the ensuing year are as follows:

President, T. O. Andrews; Secretary-Treasurer, J. F. McIntyre, of Ventura; Vice-Presidents, E. Hart, L. E. Mercer, George Hawley, George Emerson, J. K. Williamson, Delos Wood, F. E. Brown, L. L. Andrews; Executive Committee, Geo. W. Brodbeck, M. H. Mendleson, and G. S. Stubblefield.

The South Dakota Bee-Keepers' Association held its fourth annual meeting in Yankton, Jan. 20, at 2 p.m. The election of officers resulted as follows: President, Thos. Chantry; Vice-President, C. F. Lingo; Secretary, Jessie Mattison, of Tabor; General Manager, J. J. Duffack; District Presidents, Ben Schlaffle, L. A. Syverud, and R. A. Morgan.

A vote of thanks was extended the retiring officers for their efficient work during the past year, and Manager Duffack was handed a \$5 bill as a slight recognition of services rendered. The members of the Association report a most profitable gathering, and that they had enjoyed the convention exceedingly.

Mr. G. F. Merriam, of San Diego Co., Calif., writing us Jan. 19, said:

EDITOR YORK:—Southern California has had a rain at last—the first—but it was so light that it was little or no good. Here, we got about $\frac{1}{8}$ inch, but this morning a cold north wind is blowing. We never get any rain while the wind is in the north.

A man put out a fire last week which burned over a fine bee-range for me, at one of my out-apiaries. G. F. MERRIAM.

Surely, the prospects for the bee-keepers in Southern California are far from flattering. In fact, if sufficient rain falls to come by the right time, the honey-flow will be doomed, and the bee-keepers will be in despair. How dependent we all are on water. What a great blessing it is.

Editor H. C. Morehouse, of the Rocky Mountain Bee Journal, writes:

"Becoming effective Feb. 10, the price of the Rocky Mountain Bee Journal will be advanced to \$1.00 per annum, and enlarged to 28 pages."

This probably means what we have known for a long time, that no one can publish for any great length of time, a bee-paper worthy the name at 50 cents a year, where it is wholly dependent upon its receipts from subscriptions and advertising. If a bee-paper is worth anything at all it is worth \$1.00 a year to any bee-keeper.

A Dry Time in Southern California.—Mr. W. A. Pryal, one of our valued California readers, wrote us as follows Jan. 13, from San Francisco Co.:

DEAR MR. YORK:—The clipping herewith sent you is from one of our local papers. It presents rather a dark picture of things climatically in the lower part of the State. It may turn out, though, that there will be abundant rains through February and March, and I trust such will be the case. It is not only the bee-keepers that need the rain, but all other persons as well, who depend upon the products of the earth drawn through roots of the vegetable kingdom. If I mistake not, the fruit-growers require more rain than others, as the ground has been dried out so deep that the soil will have to be well saturated to make up for four or five dry years that have gone by. While we had a fair rainfall in this portion of the State last year, still there are places where fruit-trees suffered, owing to the fact that the rain did not penetrate deep enough into the soil. So far this year, in the counties above here and on the eastern side of the Bay, but not inland, there has been plenty of rain. I have been told that something like 35 miles of here the rainfall has been less than half of what there has been in this city. Why, here the ground seems to be thoroughly saturated. No one here looks for a bad year, though the outlook in the San Joaquin and other valleys in the central and southern portions of the State, the prospects are gloomy. Yet, as I have stated, old Jupiter Pluvius—I think that's what they call him—may condescend to favor the whole State with a liberal dispensation of the fluid that makes plant-life grow, and thereby, cause the wheels of commerce to hum.

While on this matter of climate, I shall take this opportunity to add a few lines that will make you wish you were out here by the Western Sea. I was over to the old home on both Christmas and New Year's—I never missed a Christmas at the old home, the scenes of my childhood, etc. Well, I went out with a lady who was at our home (she is from Los Angeles, I may add) to look through the raspberry patch—a large sized one it is, too. I thought I would be able to get some nice, ripe berries. And I was not mistaken. Some canes had large clusters of large, ripe fruit. The lady was surprised—though her people had been in the small-fruit growing business near the City of the Angels, she never saw ripe raspberries on the bushes at Christmas-time. And this lady is a native of Wisconsin.

Again, on New Year's, I had more berries off the same patch—there were boxes of them. And the bees were merrily humming amid the flowers of these raspberries. Then the callallies were in bloom at the same time—and they and heliotropes, nasturtiums, and such-like semi-tropical plants, were in bloom, too. Just think, right about this bay of San Francisco you can gather luscious oranges from the trees in midwinter!

I notice by the papers that it is excessively cold in and about Chicago. Say, wouldn't you like to be out here where the sun shines nearly every day in the year, and where the thermometer seldom reaches as low as 26 degrees above zero?

But enough. We can not all live in one place.

San Francisco Co., Calif., Jan. 13.

W. A. PRYAL.

Now, look here, Mr. Pryal, if you don't stop holding up such alluring temptations right before our eyes, as mentioned in your last two paragraphs, we don't know what we will do to you. What do you think we are made of, anyway, to withstand such suggestions?

But you don't say anything about the beautiful snow, and eight weeks of fine sleighing, such as we have here this winter. Who'd want to be melted all the year around, and befogged, and covered up with dust, besides? No'p; we're going to 'Slangeles, some time, just to rest up; and may be to Catalina again. But that will likely be all we can do, for on a weekly paper like the American Bee Journal we can't be away very long at a time.

Oh, yes, here's that clipping you sent along with your good letter:

DROUGHT IN SOUTHLAND IS BECOMING SERIOUS.

LOS ANGELES, Jan. 12.—The drought which has continued throughout Southern California for more than three months, just at the season when under normal conditions there is the most plentiful supply

of water, is becoming a serious matter to ranchers, and particularly to owners of livestock.

According to a bulletin just issued by the Weather Bureau, this season has been thus far the driest since the winter of 1863-64, when, according to the records, which were then kept by individuals, no rain fell during the winter. There is water for irrigation, much of it from artesian sources, but the artesian plan has been lowered to such an extent that many wells, which have always been flowing wells heretofore, must now be pumped.

The expense to cattle-owners is enormous because there is no green feed, and the prices of dry feed are accordingly high. In places the absence of water is causing suffering among the cattle. No rain has fallen here since Oct. 1. There have been slight showers in places, but no general downpour of sufficient volume to do any real good. Despite these unfavorable conditions the prospects are most flattering for an excellent citrus crop.

Some Expert Opinion

"In the multitude of counsellors there is safety."—BIBLE.

What About Reversible Brood-Frames?

If for some reason you were to start in anew to keep bees, and were obliged to get an entirely new outfit—

Ques. 5.—Would you use a reversible frame? If so, why? If not, why?

N. E. FRANCE (Wis.)—No. No advantage.

EUGENE SECOR (Iowa)—No. Too much monkey-work.

Mrs. J. M. NULL (Mo.)—I have no experience with reversible frames.

P. H. ELWOOD (N. Y.)—No. The reversible fad has gone by, never to return.

O. O. POPPLETON (Fla.)—No. Too much labor and bother for the benefit obtained.

J. M. HAMBAUGH (Calif.)—No. I do not consider it worth the trouble and expense.

Mrs. L. HARRISON (Ill.)—No. I'm too old to try new inventions. I do not like changes.

G. M. DOOLITTLE (N. Y.)—No. Because its disadvantages are more than its advantages.

GEO. W. BRODBECK (Calif.)—No. I can accomplish all that is required without reversing.

DR. C. C. MILLER (Ill.)—No. I don't know of any sufficient advantage to make it advisable.

ADRIAN GETAZ (Tenn.)—No. No advantage whatever. Useless complication in fixing and handling.

C. P. DADANT (Ill.)—No. Reversing has never proved practical or advisable, except in very rare instances.

C. DAVENPORT (Minn.)—No. I do not believe there are advantages enough to offset their disadvantages.

E. E. HASTY (Ohio)—Think not. Advantages some, but not enough to justify "fussing up" the frame.

REV. M. MAHIN (Ind.)—I would not. I can see no advantage in it. It only makes extra trouble for no benefit.

WM. ROHRIG (Ariz.)—I think not. I have never used them to any extent. If I had more of them I might like them better.

JAS. A. STONE (Ill.)—Because I never had faith enough in such *modus operandi* to give it a second thought, let alone trying it.

L. STACHELHAUSEN (Tex.)—No. What advantages are claimed for a reversible frame I can obtain in a cheaper and simpler way by a two-story brood-nest.

E. S. LOVET (Utah)—No. Because a reversible frame would hardly be practicable in the style and size of hive and frame such as I have given the dimensions of.

DR. J. P. H. BROWN (Ga.)—No. The extra expense in hive-construction, the extra labor and the extra "fuss," would cost more than the *seeming* advantages would amount to.

C. H. DIBBERN (Ill.)—Yes, I have used a reversible frame for the past 20 years, and while I find little use for reversing shallow frames, it is *sometimes* convenient, and makes a stronger frame to handle.

G. W. DEMAREE (Ky.)—After trying reversible frames carefully, I discarded them long ago, and would not use them under any circumstances. Why? Because I have found them impracticable.

R. L. TAYLOR (Mich.)—No. Because reversing frames is unnecessary work. With my hive I can get all the advantages of reversing by putting the lower section of the hive above the upper one.

PROP. A. J. COOK (Calif.)—I hardly think so. I like simplicity. If I wished to reverse—and it certainly is desirable at times—I think I should reverse the whole hive. The Heddon reversible hive worked well in my hands.

J. A. GREEN (Colo.)—Yes. A reversible frame can be entirely filled with comb, giving more surface for brood or honey. Sometimes

reversing a frame will aid materially in getting honey transformed into brood, or getting honey moved from the brood-chamber into the sections.

S. T. PETTIT (Ont.)—No. The advantages, if any, would not compensate for the extras. Bees build the cells of their combs with an upward angle, for very good reasons. When the comb is reversed the angle of the cells with its advantages are reversed.

E. WHITCOMB (Nebr.)—No. Reversing frames in the bee-hive seems, in a measure, to disarrange their manner of housekeeping, and to keep them working their former arrangements over again. For ourselves we would not care to have some person come along occasionally and turn our home upside down by turning the house over, or reversing it, as the saying goes. Bees appreciate about the same conditions in the hive, and generally we like to place every frame just where we took it out when looking the colony over.

R. C. AIKIN (Colo.)—I would not use a reversible frame; at least I feel that way now. Such would have slight advantages in deep frames. But, say, my shallow frames *are* reversible; they are exactly alike either side up, but I do not practice reversing, generally. Because when I "alternate," putting the bottom part of my divisible brood-chamber hive to the top, or in the middle if there be 3 or 4 sections as there often are, the combs that are toward the top will be built solid to the bottom-bars. Split such a hive in the middle, putting the lower half to the top, and the upper to the bottom, and you have brood to the very last row of cells next the top-bar, so if they store honey above the brood it *must* go above the brood-chamber. I do not think reversing will pay with deep frames, and it is not necessary with shallow ones. I do, however, when manipulating the little frames, often turn them upside down, sometimes to get the comb built to the bottom-bar, which now becomes the top, and sometimes to make the combs fit better when changing the order in which I found them.

Sketches of Beedomites

C. H. W. WEBER.

Mr. Weber, whose excellent likeness appears on the first page, was born in Hanover, Germany. After a good schooling he secured employment in a dry goods house, and remained there from eight to nine years. In 1866 he came to America, and upon reaching this country started for Cincinnati, where he found work in the same line.

In 1868 he was employed as clerk by the late Chas. F. Muth, whom he now succeeds. At that time Mr. Muth had just started in the bee-business. Upon making his visits to bee-keepers, he would take Mr. Weber along for company.

In 1872 Mr. Weber went into the grocery and seed business for himself, and continued many years with success. After Mr. Muth's death, the heirs asked Mr. Weber to be his successor. With the aid of his ambitious son, Mr. Weber undertook the business, and he has built up a large trade, handling from six to seven cars of bee-supplies in a season. He also has bought and sold, this season, five cars of comb honey, which was mostly received from the West. He has a large honey-trade, as he handles nothing but the pure article. His sales of extracted honey for manufacturing purposes amount to about 60,000 pounds per month. His honey-bottling department is greatly improved, and he can now bottle 1500 pounds per day. Before taking any honey into his place, Mr. Weber makes a chemical analysis, as he can detect any adulteration of even 5 percent.

Mr. Weber is a great bee-lover, and has a roof-aplary of 50 colonies, five stories high, used mainly for rearing queens. He has another apiary 5 miles from Cincinnati, and still two other apiaries in different places near Cincinnati.

Mr. Weber is treasurer of the Hamilton County Bee-Keepers' Association, and is doing all in his power to have a county inspector appointed in order that the dreadful malady, foul brood, may be wiped out of the country. Mr. Weber is satisfied that in one or two years formaldehyde will be the extinguisher.

We had the pleasure of meeting Mr. Weber when attending the Denver convention of the National, a year ago last September. He is a sturdy, honorable German, as his picture indicates. He is also one of the American Bee Journal's reliable advertisers.

Los Angeles Convention Report.—We find we have left some complete sets of the American Bee Journal containing the full report of the proceedings of the convention of the National Bee-Keepers' Association, held at Los Angeles, Calif., in August, 1903. There are 14 copies in a set. In order to close them out quickly, we will send them, post-paid, for only 10 cents a set, in stamps or silver. Better order at once if you want them.

Contributed Articles

Life of Bees—England and America Agree.

BY G. M. DOOLITTLE.

I HAVE read and re-read the comments of D. M. M. and the editorial remarks thereon, as found on page 820 (1903), and, notwithstanding the conclusion that "The Life of Bees" might be a "matter that should be taken up by the experiment stations," I do not see that such should be the case from any material difference which comes from the experiment as conducted by D. M. M., and those which have been conducted in the United States. The experiment of D. M. M., as he reports, really shortens the length of life of the worker-bee in the working season from the six weeks, as formerly given by our experiments on this side of "the water," to only 40 days on the England side; instead of its being 61 days, as figured out on page 820. [This was corrected on page 19.—Ed.] Assuming that D. M. M. removed his black queen on June 6, as he gives the matter, the last black bee would not have emerged from her cell until 21 days thereafter, which would make the date we should figure from, in getting the life of those bees, as June 27. And as he says that all had disappeared on August 6, we have the matter thus: 3 days remaining in June, during which the last-emerged bee really lived; 31 in July, and 6 in August, supposing that the latest descendant of the removed black queen died on that date (Aug. 6). Thus, we have in days lived by those last emerged bees, 3, 31 and 6 added together, which makes just 40 days instead of the 61; for in this matter we cannot consistently say that the bee is living in the "real life form" while it is in the egg, larva, or pupa state of its existence.

And if the above is right, to which think all will agree, then it would go to prove that from some reason, such as the state of atmosphere, longer journeys after forage, or different environments, England is not so conducive to length of life in or with the bees as is the United States; for our experiments here have repeatedly shown that black bees live in this country 42 days, as against the 40 in the experiment of D. M. M.

I see that D. M. M. marvelled over the rapid disappearance of the black bees, especially during the last "fortnight." That was just the way it appeared to me in my experiments. But there is an item here that we often lose sight of, and one that has much to do with the having of the maximum number of bees on the stage of action in just the right time for the honey harvest of any given season of the year. That colony of his did not reach its maximum strength, as given by that black queen, till June 27, or just 21 days after she had been killed or removed from the colony; that is, if his climate and locality is anything as it is here in New York State. He estimates that his colony had 30,000 bees in it at the time he put in the Italian queen, and, if so, I venture that the same colony had at least 45,000 bees on June 27, at the date of the last emerging black bee; for, with me, queens very nearly or quite double the amount of eggs they lay during 24 hours between May 16 (the time the last eggs were laid for those bees which were in the colony when he estimates them at 30,000) and June 6. In other words, if any queen is laying 1500 eggs a day on May 16, in this locality, she will be laying from 2500 to 3000 each day during the first half of the month of June. Hence, all will see why it appeared that the "decrease in numbers was something extraordinary" during the last fortnight, for there were nearly double the bees to die each day during that time that there were at the time of the introduction of the Italian queen. My experience would say that the bees were dying during the first days of August at the rate of from 2000 to 2500, instead of the 500 that he gives as the average.

Some seem to think that this age of bees, or how long they live, amounts to nothing except as those who write about it have a little scientific controversy over the matter; but I claim that on this thing hangs something of vital importance to every practical bee-keeper. Supposing that from some reason that Italian queen had been killed, and that no other had begun to lay till 20 days later, as would have been the result had no queen been given (as is usually the case where nature takes its course after a queen is re-

moved); then D. M. M. would have had a colony right in the height of the basswood honey-flow, had he lived in this State, with a big shortage of bees just when they were needed the most.

I do not know that I have made this as plain as I might have done, but the practical thing I wish to impress on every apiarist is this: Don't remove any queen, if you can possibly help it, from any colony during any time from 40 to 70 days previous to your expected honey-flow—that from which you expect to derive a surplus; for if you do, you will cut the laborers short during your harvest by about 2,000 to 3,000 for each day there is no laying queen in the hive, and this cutting short often makes the difference between a paying crop of honey and no crop at all.

I knew a bee-keeper who once changed all his queens during the last half of May and the first half of June, according to the advice of a neighbor, allowing each colony to rear its own queen, and the result was that he got scarcely 100 pounds of honey from his whole apiary, while the bees about him did fully as well as usual.

Onondaga Co., N. Y.



Carbon Bisulphide as an Insecticide.

BY J. H. BEATTIE.

DURING the last few years carbon bisulphide has been much used as an agent for destroying insects and vermin infesting grain, dwellings, mills, elevators, etc. It has many qualities which make it highly desirable for such purposes. It is not poisonous to the higher animals when taken in small quantities, hence an inexperienced person can use it with comparative safety. This is true of very few of the best insecticides. They are either extremely poisonous, or so difficult to handle that they can not be used by any but an expert.

Carbon bisulphide, under atmospheric pressure, is a gas, but it may easily be kept in the liquid state by keeping it in air-tight vessels. It may even be preserved by placing it in an open vessel and covering it with water. The pressure given by the weight of the water is sufficient to prevent it from volatilizing. The specific gravity of carbon bisulphide at 0° C. is 1.20. When in the gaseous state it has a specific gravity of 2.63 as compared with air. This fact makes it very useful for places like granaries where the top is open while the bottom part of the granary is tight.

One of the greatest objections to the use of many of the more common insecticides lies in the fact that they can not be used where there may be either prepared or raw materials. For example, hydrocyanic acid can not be used where there are food materials, as it is a gas only at relatively high temperatures, and hence will condense on cold subjects such as potatoes, apples, etc. Again, it is very soluble in water, and as all prepared food-stuffs contain a large percent of water, it will readily be seen that these food-stuffs would most surely be poisoned if the building containing them was to be fumigated with hydrocyanic acid. On the other hand, carbon bisulphide is free from both the above-named faults. It will neither condense on cold objects, nor will it in the least injure food-stuffs. It may even be used on prepared foods, and, provided that it is given time to evaporate these foods, may be used without the slightest danger.

Carbon bisulphide is not poisonous to man unless breathed in comparatively large quantities. It will, when taken in excessive quantities, produce dizziness, congestion, coma, and finally death. It affects the heart action especially. Persons having weak hearts will do well to keep away from carbon bisulphide.

The variety of uses to which carbon bisulphide may be put is very large. It may be used around the dwelling to destroy cockroaches, mice, rats, flies, etc. It may be used to rid grain of weevil or similar pests. It may be used to rid mills and elevators of the flour-moth, or, in fact, of any insect or animal. It is quite often used to destroy ant-hills. It has been used with great success to kill gophers or woodchucks in their burrows. It is quite often used in conservatories to rid the plants of lice. It must be said, however, that as a general rule hydrocyanic acid will be found more satisfactory for this last purpose.

Carbon bisulphide may be obtained on the market in cases of various sizes. The one-pound can will be found to be a very satisfactory size for most people. Persons intending to fumigate large buildings will, of course, find it more economical to buy the bisulphide in large quantities.

As to the amount of carbon bisulphide to use for buildings, proceed as follow: Calculate the cubical contents of

the building, then provide one pound of bisulphide for each 1000 cubic feet of space. Also provide shallow dishes or cracks, one for each 1000 cubic feet of space. Distribute these vessels over the building as evenly as possible. Make all windows and doors as near air-tight as possible. Commence on the ground floor, and place one pound of the bisulphide in each dish. Work rapidly as possible to be consistent with thorough work. When the bisulphide is distributed over the first floor, proceed immediately to the second floor, closing the door between the floors completely. When the top floor is reached, leave the building by means of a ladder previously provided. Do not go near the building until several hours have passed.

It is well to begin the fumigation in the evening, and by morning all the gas will have disappeared unless the building is unusually tight. In some cases it will be well to place a watchman to keep all persons away from the premises.

One thing must always be borne in mind, the gas is extremely inflammable, and hence every precaution must be taken to have no fire around. Incandescent lights are not safe, as a spark is liable to be formed in switching the lights on or off.

In fumigating such materials, as stored grain or ground feed, it is generally thought best to proceed as follows: Allow one pound of the bisulphide for each 100 bushels of grain, or in cubic feet, one pound of bisulphide for each 125 cubic feet of space actually occupied by grain. Put the bisulphide in shallow vessels placed on the surface of the grain, and leave the immediate vicinity at once.

If ordinary precautions are taken there need not be the slightest danger in using carbon bisulphide.—The Agricultural Student.

Convention Proceedings

THE COLORADO CONVENTION.

Report of the Proceedings of the Colorado State Bee-Keepers' Convention, Held in Denver, Nov. 23, 24, and 25, 1903.

BY H. C. MOREHOUSE, SEC.

(Continued from page 69.)

QUEENS AND THEIR IMPORTANCE.

Mr. Gill—The queens that we have in the apiary put money in the bank. There is a difference in races, and a difference in individual queens. By careful selection, I have been trying to improve mine. In Wisconsin I succeeded admirably. I got my first in 1878, and in the succeeding 16 or 18 years I materially improved them with reference to the traits of using wax instead of propolis, hardness, wing-power, and honey-gathering qualities. Last year I bought 250 queens, 25 to come a day during the swarming season, of the same strain I had in Wisconsin years ago, from a thoroughly reliable man. He had been running for extracted honey, and dequeening about June 25 for the basswood flow. The queens had been reared last year from good cells, and were taken from the hives in full condition. This proved to be harmful. To-day not 40 or 50 percent are alive. Some did not begin to lay soon, and some were drone-layers, and their colonies did not begin to be as good on the first of August as colonies that had been given good, ripe cells. Therefore, to take queens in the height of the breeding season and mail them in hot weather is very unsatisfactory. I also got 50 queens from Tennessee, young queens just beginning to lay. They proved very effective and satisfactory. Therefore, for much of the difference between queens the queen-breeder is not to blame, but it is a matter of the proper conditions.

A Member—I had a little experience with young queens from the South. Instead of putting them in large colonies, I put them with one or two frames of brood as early in the spring as I could, and built them up. I took as high as three supers of honey from such colonies.

PLANTING OF TREES AND CONSERVATION OF FORESTS.

Mr. Stone (President of the State Forestry Association)—The subject I have to present to this convention will interest every man who has to do with the soil, as all rural pursuits depend so largely upon irrigation. Our State Forestry Association was organized in 1884, and we have kept up our activities ever since. It has been and is now entirely a voluntary organization, with no official connection with the State, governor, or legislature, and consequently no government patronage. As to our expenses, we depend upon membership fees. What we stand for is contained in our constitution—the planting of trees and the conservation of forests. I wish that every farmer who owns land would plant a few useful trees, such as black locust and catalpa. In a few years he would begin to draw his recompense.

Three weeks ago our association decided to try to induce the authorities at Washington to increase our forest preserves for the preservation of moisture. The Government has already done much to stir us to action. On the map that I show you, you can see that four areas are at present reserved; each of contiguous land. But in these four are six: The San Isbell Reserve, on the Sangre de Christo range, of 120 square miles; the Battlement Mesa Reserve, including Grand Mesa, of 1850 square miles; the White River Reserve, of 1830 square miles; the Pike's Peak Reserve, of 279 square miles; the Plum Creek Reserve, of 1086 square miles; and the South Platte Reserve, of 1086 square miles, making a total amount that is about equivalent to the area that we have under ditches. We propose, in addition, to ask for a reservation beginning at Wyoming, and going clear down the range. We can not have too many reservations at the headquarters of streams. Our petition to the Secretary of the Interior recites, first, that agriculture in this State is almost entirely dependent upon irrigation; second, that that portion of irrigation which comes from the high mountain ranges is dependent for the quantity and quality of its flow on forests and the preservation of forests; that the effect of the careless removal of the forests of these mountain areas has already tended to dry up the streams and fill up reservoirs and canals with sediment; and therefore asks that all territory in the basins of rivers and creeks, beginning with the Medicine Bow range, and continuing south to include the Sangre de Christo range and the Saguache country, and especially all areas above 8590 feet, be set apart as forest areas, and tracts reforested, except such as are necessary for mining ranges.

Mr. Fellows—I didn't come to make a speech. I think this is one of the most important questions that affect the State. As a government official, I naturally realize it more deeply. It is a fact that the water supply is so threatened that it is almost a doubtful proposition. There are three projects of government works for irrigation on the South Platte, the Grand, and the Uncompahgre and Gunnison rivers. No great project can be carried out on the first, for the Platte supply is practically exhausted now; that is, if there were an average flow next year equivalent to what has been the flow of late years, and all the reservoirs now built took water, they could not all be filled and reserve water priorities. The Grand River project is still feasible, but the several ditches now built or projected would take all the flow at Grand Junction. The Gunnison River tunnel is the most feasible, but at the same time the flow is so low that it is considerable less than the tunnel will carry. But there is ground for alarm lest denudation of the forest slopes affect the latter two projects also. It is therefore absolutely demonstrated that denudation is one of the prior causes of the lack of water.

Mr. Stone—We have local petitions, but the one here presented is the general one for the whole State, such as we ask other State organizations to support.

Mr. Rhodes—I move we indorse the work presented, and instruct our President and Secretary to sign the petition as presented by Mr. Stone. [Carried.]

Mr. Pease—If the water for the projected reservoir to supply the High Line ditch is already exhausted, is it not a waste of money to build it?

Mr. Fellows—It may be successful in taking floods of short duration. This would not be true if water were required to be carried to it for 100 or 150 days.

APIARIAN EXHIBIT AT ST. LOUIS EXPOSITION.

Ex-Senator Swink made a strong plea for an apicultural exhibit at St. Louis. He said it was the time of our life to make an exhibit, as it was the biggest exposition ever made

in the United States. Nearly every other exposition has been somewhat local, but St. Louis is universally conceded to be the best place for it. Though this last year has been one of the off years, he is confident that a good display can be made, by including next season. Some say they sent exhibits to former exhibitions, but never heard of them again; but he will have charge of this exhibit, and will see that everything is returned or sold, and the proceeds turned over. He knows the exhibit he made in Omaha sold a great deal of Colorado honey, and is sure that this will. A fine display can be made if all chip in what they can. He expects to give all his judgment to the matter, and use the judgment of others. He has the promise of the best space, and the best location, in the Horticultural Building. He especially recommended sending something special, out of the common order, as it catches the eyes of many thousands, and goes a long way toward the success of a general display; it costs more to prepare such an exhibit, but it pays. The superintendent has promised to arrange to have colonies of bees there in working order.

Mr. Wilson spoke in the same vein, saying that Colorado melons have a national reputation through Senator Swink's advertising, and we can have the same reputation for honey by advertising in the same way. Each individual who sends an exhibit will be given credit for it.

Pres. Harris—Unless we look out the Mormons will take the first prize. They are making extensive preparations for the Exposition.

Mr. Gill—I move the Colorado State Bee-Keepers' Association give earnest and loyal support in getting up a proper exhibit at St. Louis next year. [Carried.]

Mrs. Mary Wright, State Dairy Commissioner, was introduced, and said she would do all in her power to aid the bee-keepers in doing away with the competition of impure honey.

Mr. M. A. Gill, of Boulder Co., then read the following paper:

TO WHAT EXTENT WILL IT PAY COLORADO BEE-KEEPERS TO MANUFACTURE THEIR OWN SUPPLIES?

In my opinion the time has come when the bee-keepers of the West should manufacture the most of their supplies.

In making our own supplies, as in buying them, one of the vexations is that we require so many different systems, which, of course, will require different kinds of hives. But these notions of ours can be met just as well by making them as by buying them; the only difference will be, it will cost a little more, like it does any manufacturer to be all the time changing his machinery.

We should simplify our fixtures just as much as possible, and this will not only cheapen them, but enable us to handle more bees. Most amateurs, when they look at a complicated hive-cover, or a complicated frame that is hard to make, will think that there is some hidden potency in the construction that is necessary for them to secure the largest production of honey, or the successful wintering of their bees. But the practical, experienced bee-man knows that the more simple we can meet the requirements of the bees the better it is for the bees, as well as the most profitable for the owner; and that many of the complications are a trick of the manufacturers to head us off from making our own supplies.

It has been said that Colorado had no lumber that would make a good bee-hive, and I, myself, used to think that way. But four years ago I made 200 hives and 600 supers from white spruce. The lumber was well seasoned. I cut them accurately and nailed them up in a workman-like manner, and gave them two good coats of lead and zinc paint, and I find them to-day in better repair than hives made from soft pine by Eastern manufacturers. When I say better repair, I mean the whole 1½-story, which includes the super, cover, and hive-follower, all of which are a nuisance as now made by the factories.

There is also a species of soft white pine that grows high up in the snow in the vicinity of Long's Peak, that also makes a good hive. Most bee-keepers around Longmont have been making their own hives for the past four years. We find it the most satisfactory to give our orders for lumber right to the mill owner, and have our lumber cut with proper regard to width and thickness, so that when the lumber is seasoned, planed, and cut into hives, there is the least possible waste.

We have bought our pattern slats (for supers) and Hoffman frames in the East, and for my own part, for comb honey and rapid handling, I must say I prefer the Hoffman frame, but as the price has gone to 2½ cents each, I think we shall change to a plain staple-spaced frame, with heavy

top-bar, and made from our best, picked, native material; and I think they can be made for one cent each.

I will say to any one who intends to make his own hives, Don't make them from any lumber you can pick up, or you will be sorry you did not buy your hives at any cost. Two years ago I could not get white spruce or white pine, and so I made my hives and supers from what was called Arizona spruce, and it proved very unsatisfactory. Mr. Hickox also made a quantity that season from the same material, and I think it about disgusted him with home-made hives. Thus, I say, get the best native material, have it well-seasoned, then make it up in a workman-like manner, paint it good, and your hives will prove satisfactory, and you can make nearly two for the price of one Eastern hive.

Our Longmont hive is made so that all parts are interchangeable with the standard 8 or 10 frame hives, but, in my opinion, it is a better and more substantial hive.

We have a better super, more convenient for rapid handling, and more substantial. For my part, I do not like the little wiggly, short-lived section-holders of the factory-made hives. I do not like the hive-followers that are made from the scrap-pile at the factory, nor do I like the covers as furnished by the factories, that will leak and commence falling to pieces within two years in this climate.

But I am not here to discuss my own likes and dislikes, nor my particular kind of hive and fixtures, but that a good hive can be made from Western lumber, and at a price that we can afford.

I want to say that I have no complaint to make against any Eastern manufacturer, nor any Western dealer, nor have I any hives to sell, nor any interest in the sale or manufacture of any hives or fixtures. I am simply a honey-producer, and from this stand-point I find it sensible, as well as profitable, to have as little money tied up in fixtures as possible and still keep our bees in merchantable shape.

While we have never made any shipping-cases, I believe they can be very profitably made somewhere in the West for 10 cents each, even if they are not quite so fancy in appearance as the Eastern made.

We are told that the prices of sections have been nearly doubled on account of the great scarcity of basswood lumber, and that we must soon return to the use of the four-piece section. I will say that when I can not have the Rauchfuss press and the one-piece section, I shall return to the production of extracted honey entirely. With regard to this, let me say, Have no fear for the next few generations but what the dealers will furnish us with basswood sections if we pay the \$4.00 and \$5.00 per thousand. If I did not know something about the millions of feet of standing basswood to be found in that section of our country lying between the great Mankato woods in Minnesota and extending to New York, and including the Canadas, I should think perhaps that the great shortage of basswood lumber was the only cause for the recent excessive rise in the price of sections; but I know that the price of basswood lumber in my old State (Wisconsin) has not risen as has the price of sections.

There is a great future for the bee-industry in the great West, and the new Moffet railroad will open up a section of country where there are vast quantities of lumber that will make good bee-supplies (not including sections), and in my opinion there is a good field right now for the extensive manufacture of bee-supplies right here in this Western country.

M. A. GILL.

Mr. Gill—I want to say a few things not in the paper. I feel that while we have been allowed to be carried along in advance of the prices, the time has come to show those people they can't infringe on us. Material is not so scarce. The only way is to force them to come down.

F. Rauchfuss—At what price can you buy lumber in Longmont suitable for hives?

Mr. Gill—White spruce, just such widths and thicknesses as are wanted, costs us \$10.50 per thousand; and well-seasoned, \$17.50 per thousand, and \$3.00 for dressing.

F. Rauchfuss—How does it run as to knots?

Mr. Gill—We picked the lumber. There are some knots, but they are tight, and do not show through the paint.

Mr. Whipple—I made 300 supers at a cost of not quite 10 cents apiece, as good as anything I can buy.

Mr. Aikin—How shall we reconcile our use of native lumber with our support of the Forestry Association?

Mr. Gill—We will observe the laws, but this is a question by itself.

H. Rauchfuss—I believe the time has come to manufacture our own supplies, not only in Colorado, but in the

other Western States. The manufacturers have formed a trust. Next year perhaps they will add 5 percent to their prices, and next year again, and so on. We have to show them we are fixed for making hives. I don't think we will have to make very many.

Chas. Adams—For four years I have used Mexican or Oregon pine in making hives, and found it satisfactory.

Mr. Gill (showing a 1½ story hive)—This hive in the flat costs about 80 cents, including the pay for labor, which is 17 cents. The super-slats are ⅜ inch instead of ¼ inch.

Mr. Aikin—This discussion is intensely interesting, but I see difficulties ahead. Where is the supply of lumber to come from, especially when our forest reserves shall be established? Perhaps the reservoir system may help out the forests. But, after all, I have never been able to make hives as cheaply as I could buy them, except once. But I am heartily in sympathy with the movement. It may bring the transportation companies to a recognition of the facts. This transportation question is no small item.

Mr. Gill—The supply is not so limited as you would be led to think. But if a large factory is established, then the place to get lumber from would be Idaho, which has vast forests. The new railroad to Salt Lake will open up many tracts not at the headwaters of streams. I think Mr. H. Rauchfuss struck the key-note in his remarks.

Mr. Morehouse—For five or six years I have made my own hives from Mexican pine, and found it satisfactory. It cost me \$24 per thousand.

Mrs. Booth—Supposing we did get a factory, how long would it be before an opposition would be started?

Mr. Swink—The difference between lumber in the rough and bee-supplies is simply enormous, so that the freight-rates alone would be a big saving. There is no question but we can get the lumber as well as they can.

(Continued next week.)



Report of the Nebraska Convention.

The Nebraska State Bee-Keepers' Association met in the experiment station building at the University farm at Lincoln. The attendance was large, and much interest was shown in the discussions.

Pres. E. Whitcomb opened the program with an address on "The Past, Present, and Future of Bee-Keeping in Nebraska." He related that his interest in the bee-business dated from the time he foraged a barrel of honey during the Civil War. Bees were first found in Nebraska by soldiers, who usually robbed them of honey. An instance is on record of a soldier being killed by honey obtained in this manner. Mr. Whitcomb explained that honey was not poisonous, but that when bees were mad, a poisonous substance called formic acid was dropped on the honey by them, and this is why honey taken by the robbing process is often fatal. He said that Nebraska had a great variety of honey-producing plants, and that this fact accounted for the great variety of honey produced here.

Mr. Whitcomb deplors the habit of nurserymen in spraying their fruit-trees while in full bloom. The bees are killed by working on these blossoms, and the spraying is no more effective than if done at a later period. Nurserymen would have but poor success if it were not for the bees.

The honey-production in Nebraska, he said, was 1.5 pounds per capita, and one pound of honey is as valuable for food as two pounds of pork, and contains as much medicine as any drug-store would sell for 50 cents. He said that because alfalfa has so little flavor some people think it is manufactured. Comb honey can not be adulterated, but a glucose mixture is often sold for extracted honey.

Miss Lillian Trester next read a very interesting paper entitled, "The Supply Dealer." She said that supply dealers like to meet their customers, and to encourage beginners. They were always willing to advise customers, but that sometimes it is better to let the customer have what he wants, and then he will be better satisfied.

After a recess resolutions on the death of M. L. Trester were passed and ordered spread on the minutes, and that a copy be sent to the bereaved family. Mr. Trester was a member and an ex-president of the Association.

The report of L. D. Stillson, as secretary-treasurer, was read and adopted.

Officers for the ensuing year were elected as follows: President, E. Whitcomb; Vice-President, L. H. Trester; Secretary-Treasurer, L. D. Stillson, of York.

Hasty's Afterthoughts

The "Old Reliable" seen through New and Unreliable Glasses.
By E. E. HASTY, Sta. B Rural, Toledo, Ohio.

THE "LARDING" OF BEE-QUILTS.

A little rough on the bees, to give their new quilt of old carpet a heavy daub of old, rancid lard. Probably they will stand it rather than abscond (that is, providing they are not a newly-hived swarm), and the real harm may be small, except to the bee-keeper's own feelings. Some fussing may be called for before all the underside of the quilt gets propolized over—strips of it being protected by the wood of the frame-tops. It is possible, however, to have it nearly all coated the first exposure if there is just the right amount of burr-comb to lay it on. I use enamel, and have lots of trouble about bees eating holes. I think stray larvae of the wax-moth start the hole in most instances, and then the bees are zealous to enlarge it. Wonder if a sufficient daub of lard would disgust the larva, and keep *him* from eating holes. W. A. Moore, page 796.

BUTTERFLIES DON'T PRODUCE MOTHS.

No, Mr. Nebraska, your killing all the butterflies, and your not being troubled with moth-worms last summer, are totally unrelated "happenstances." The mother of this mischief is too small, and far too sly, to be attacked in that way. And systematically killing the wrong kind of creature doesn't make us feel right in our own eyes, most of us. Let's be sure we've got after the right villain, and then go ahead with the killing. Page 797.

BURNING UP ROBBER-BEES.

Burning up bunches of would-be robbers with a torch is a vehemence of warfare not to be followed in ordinary cases. Barely possible that there may be extremes in which it would be justifiable. But things come into my mind once in awhile. Had the excited bee-man spent a couple of days beating a tin pan, or in any other way of working off surplus nerve force, might not the bees have become quiet the third day just the same? Page 798.

STEEL-PLATE NO GOOD FOR HIVE-ROOFING.

So! In the modern direct processes of making steel they burn out some ingredients which used to protect iron plate from corrosion. Eventually they will learn to put these things in again at the close of the process; but, perchance, a good many years of trouble will ensue first. Sad to find that steel plate is no good for roofing any more—and that even thorough painting does not make it so. My "notions" incline me to feel very contemptuous toward painted cloth for roofs; but it begins to look as if I should have to do what others before me have had to do—give my notions up. Page 798.

MAN-PICKED AND NATURE-PICKED DRONES.

If the alternative comes to man-picked drones or Nature-picked drones—only that and nothing more—man is going to worse than waste his time, I very freely grant. But let men pick a thousand, and then Nature pick one out of the thousand—what's the matter with that scheme? At any rate, we may be glad to know that Nature has a method of breeding by selection which is very hard to improve on.

BANDED BEES IN EVERY APIARY IN CARNIOLA, NOT IN EVERY HIVE.

I was intending to remark, anent a matter gone by, that Frank Benton's corrected observations concerning bees in Carniola, was that he found banded bees in every apiary, but not in every hive. Guess it is not too late to make the correction now.

BIG BARRELS IN CANADA.

We knew that Canada was a country inclined to big-gishness, but we didn't know before that a barrel held 1000 pounds up there. Why, a barrel with 1000 pounds of honey in it would be in the condition of some Yankee bee-keepers' heads! Page 803.

THOSE ANSWERS ON SIZE OF HIVE.

It's just nicely a which-and-'tother contest that the 8-frame hive and the 10-frame hive have on page 804. Two

dodge the question, and four give answers not readily adjustable with the rest. Of the 22 that remain, two are for 7, eight are for 8, two are for 9, nine are for 10, and one is for 12. In other words, ten go for more than 9, and ten for less. Thought be sure I should show up lonesome when I sent in my number 7, and, lo, I have such strong company as P. H. Elwood. Page 804.

Our Bee-Keeping Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Getting Extracting-Combs Cleaned.

If I should write a word in reply to Mr. Dadant's comments will it be set down to a woman's desire for the last word, or will it be said that I am following scriptural advice, "Agree with thine adversary quickly?" We are not adversaries, however. Both Miss Wilson and myself expressly said that to have the combs cleaned on the hives is *the best way*, when it can be so done. Probably it can be always so managed in an apiary like his, where everything is done "decently and in order" at the proper time. In the West we get the name of being somewhat slipshod in our methods, and I must admit that in my own case removing the honey and subsequent operations have to be done when and *how I can*—always a little by little, and so I find myself sometimes where I must, as it were, choose between evils, and it was thinking of others in the same boat that led me to give my choice in the case in point as, "Get the combs cleaned up in the open air rather than store them as they are."

I find I have practiced "the Taylor way" and "the Miller way," too, to a limited extent, all unwitting that I was in such good company.

Mr. Dadant's objections hold good, however. The combs are not repaired. Neither can I see that they are appreciably damaged.

Circumstances alter cases. My apiary is small, and at the last inspection there was not a weak colony in it. Neither is there a neighbor's bee within flying distance. "I am monarch of all I survey."

While I am at it I would like to give Mr. Dadant a word of appreciation. I am always ready to accord respectful attention to anything he writes, and have not the least desire to *cross swords* with him in anything, even although it would then be mine "the stern joy that warriors feel in foemen worthy of their steel." (MRS.) A. L. AMOS.

Custer Co., Nebr., Jan. 12.

Women as Rural Mail-Carriers.

Mr. H. E. Hathaway, of the carrier division of the Post-Office Department of Washington, says:

"It has been the experience of the Department that women carriers take extraordinary pains to serve their routes efficiently under the most adverse circumstances, and seem to take a pride in overcoming obstacles which would daunt the strongest man."

A woman may not lift as heavy a hive as a man, but in some cases she will stick to her work when a man would be discouraged.

A Sister's Experience With Bees.

I thought I would accept your kind invitation and write a few lines to tell you how much I enjoy the Sister's department in the American Bee Journal; and also tell you of some of my successful failures in bee-keeping.

I commenced handling bees in 1897. My brother, W. D. Phillips, bought 5 colonies of Italian bees that spring, got "A B C of Bee-Culture," and subscribed for two bee-papers. My brother being in very poor health at the time, he did the brain-work and I attended to handling the bees and looked after swarms, and, as he had promised me I could have every swarm I hived by myself, I attended strictly to business; when the swarming season was over I had 5 colonies of my own, and a prouder person would have been hard to find.

We did not secure very much surplus honey that year, but the bees went into winter quarters in fine condition. We wintered them on the summer stands with chaff-trays over them. So we read our bee-books all winter and were ready when spring opened to commence work again, as the bee-fever had not abated the least bit. So he ordered more supplies, and that year we had splendid success. We sold over 400 pounds of white comb honey.

Well, my brother's health kept failing so fast that by the next spring he was scarcely able to go into the beeyard, but as long as he was able to walk he would come out and sit under the grape-arbor and watch the bees. So I took sole charge of them myself, and would report to him, but I could not give them the proper care they needed, for I had my housework to look after and to wait upon him; but I did the best I could. Things remained in this condition until the spring of 1902, when he died, and left me with 25 colonies of bees to look after all alone. I now have 35 colonies in good shape, and have never had any disease among my bees. Last year I sold over 300 pounds of section honey and 100 pounds of bulk honey.

I love to work with the bees, and very seldom get stung now, although I have had some picnics with them; but I manage to come out ahead, always. I use the Alley queen-trap during the swarming season, and very few swarms get away.

I have never tried introducing new queens, but have just let the bees attend to that themselves, and this I consider one of my failures. I am going to get Dr. Miller's "Forty Years Among the Bees," and study it this winter before I conclude to quit the bee-business entirely. I am 56 years old, and am bothered with sciatic rheumatism, so I don't know what I will quit if I can dispose of my bees.

This is a poorly written letter, but I have enjoyed the Sister's department so much that I felt it my duty to contribute a few lines, although I expect they will get no farther than your waste-basket.

I wish you and all the sister bee-keepers all the success in the New Year that you may have wished for in the past. Adams Co., Ohio, Jan. 11. MRS. MARY A. RAY.

Don't worry; such interesting letters as yours do not find their way into the waste-basket. Please write again.

Dr. Miller's Answers

Send Questions either to the office of the American Bee Journal, or to Dr. C. C. Miller, Marengo, Ill.

Moving Bees a Long Distance.

The letter of Charles W. Sager, page 92, is of interest because it relates just how a considerable number of colonies were successfully taken in a car a long distance. Not every one would think of its making any practical difference whether bees were loaded in the front or the back end of a car, but a little thinking will satisfy one of the soundness of his advice, to fasten the bees in the front end; then when severe bumping occurs hives can bump against the front end of the car without fear of breaking loose the fastenings at the center of the car.

C. C. M.

Perforated-Tin Separators.

In "Some Expert Opinion," page 10, after looking the answers over, it does seem to me that a separator that is made of tin with perforated holes, like the Root-Tinker zinc, with holes $\frac{1}{4}$ of an inch in width, and of the same length as used in the zinc, might be used, as it would make a good ladder with the holes in them; and for $\frac{1}{4} \times \frac{1}{4}$ use separators 4 inches wide. Now, I mean $\frac{1}{4}$ -inch holes in width, as the tin separators could be cleaned by boiling in soap and water.

ILLINOIS.

ANSWER.—Such a separator would work very well if one did not care for the expense. It must be remembered, too, that tin does not work very well where loose separators are desired, as there will be more or less bending or curving lengthwise. With a surplus arrangement that allows the separators to be nailed on, tin is all right.

Feeding Glucose to Stimulate Bees.

Is it safe to feed bees on glucose or corn sugar to stimulate them? We expect to feed our bees a good deal the coming spring, as they were rather short of stores last fall.

MICHIGAN.

ANSWER.—Yes, and no. After bees can fly daily in the spring it is safe to feed almost anything in the line of sweets, but it may not be safe to trust to glucose to keep them from starving, for it is possible that you may find that they will not take it.

What Caused the Death of Queens?

The first part of April I lost 9 queens in three days, 5 of them only 10 months old. I saw one coming out of the hive, fluttering around a few times, and drop dead. What could be the cause of this—poisoning? And from what? No honey was gathered, and no dead brood or bees found in these colonies which were full of brood and bees.

ILLINOIS.

ANSWER.—I don't know. If it were poisoning, the queens alone would hardly have suffered, and you say nothing of any deaths but those of the queens.

Colony Died with Plenty of Honey.

The other day I looked into two of my hives, and found the bees down at the bottom, dead. They had plenty of honey; the colony was about 3 years old. The bees seemed to work well all summer. The trap had been on one hive for two years, I get 80 pounds of honey from it. I would like to know what was the cause of it.

NEW YORK.

ANSWER.—The bees may have died from diarrhea, in which case you will find them badly daubed. If the dead bees are dry and clean, it is probably a case of starvation. You say, "They had plenty of honey." That may mean they had honey in the fall but now have none. It may mean that honey was left in the hive after the death of the bees. It sometimes happens that a colony starves to death, leaving a good supply of honey in the hive, but where the bees could not reach it. Up to the date of your letter there has been a pretty long and severe stretch of cold weather, during which it would not be easy for the bees to reach the honey if it was two or three frames distant from the cluster.

Getting Started with Bees.

1. I am greatly interested in bees and want to start an apiary. What make of hive would be the best for a beginner?

2. How many colonies should I start with, and what breed or strain?

3. Any other suggestions. I live near Medina river, have mesquite, sage, or broom-weed, chapparral, etc., for the bees to work on.

TEXAS.

ANSWERS.—1. The kind of hive for a beginner is the one that will be best for him when he is no longer a beginner. For it is not an easy thing to change from one kind of hive—especially from one kind of frame—to another.

Neither is it desirable. Whatever hive you intend to use when fairly launched, that's the hive to start with.

2. Generally speaking, a beginner should not start with more than two or three colonies, increasing his number with his experience. Special circumstances might make it advisable to start with a large number, as where one is willing to run the risk of the loss of a few colonies for the sake of the experience.

3. If there is any one thing in the way of advice that a beginner needs, it is the advice to read up well. If you do not expect to keep more than one colony, you need one bee-book. If you intend to increase to 50 or 100 colonies, it will pay to have several bee-books and several bee-papers. You can do a lot of reading this winter that will make next summer's experience doubly valuable. Reading a bee-book will be of much use to you; studying several will be of very much more use to you.

Wiring Foundation in Frames in Winter.

I have 1,500 wired brood-frames to fill with foundation. After filling they will be stored in a room where the temperature will be about the same as out-doors. I have plenty of time to fill some now, but am afraid the foundation will break loose from the wires and top-bar if filled during cold weather. Later I will be very busy. Please advise me.

WISCONSIN.

ANSWER.—Fill 'em now. Do the work in a warm room, and while they are still warm set them where they are to stay, and then see that they're not disturbed till warm weather. The cold won't hurt them so long as they are not moved.

Size of Hives and Supers.

1. If you had just 80 Langstroth brood-frames, and could not get any more, and were a husky young man working your bees for comb honey, would you put those 80 frames in eight 10-frame hive-bodies, or would you put them in ten 8-frame hive-bodies for best results, speaking from a practical bee-keeper's standpoint?

2. Suppose you were running 20 colonies of bees for comb honey, and you had one-half of them in 8-frame hives, and one-half in 10-frame hives, the 10-frame-hive super holding 30 one-pound sections, and the 8-frame hive super holding 24 one-pound sections, which of the two sizes would the bees fill the most supers in the season, under the same conditions?

ILLINOIS.

ANSWERS.—1. I fancy I can see a rather satisfied smile on your face in asking that question, as who should say, "I rather think that will be a pretty hard nut for him to crack." And so it is, especially with the restriction that I am limited to the 80 frames, and allowed to have no more. Now, really, do you think it's giving me a fair show to shunt a question like that at me without telling me anything about what's on those frames? If you set before me the eight 10's and the ten 8's, and say that the same number of bees will be in each hive, I'll take the ten 8's quick. If you say the eight 10's are to have in all just as many bees as the ten 8's, I think I'll take the eight 10's.

2. I should expect the most supers to be filled by the 8-frames.

FROM MANY FIELDS

Moving Bees a Long Distance.

On page 9, "Nebraska" asked you about moving bees on the railroad. Having had a little experience in that way of moving bees I take the liberty to write you how I handled them. I cut 2x4 scantlings just long enough to reach across the car, nailed them to the bottom of the car both at the ends and several places to the floor. So much for that part.

My hives are the old-fashioned 9-frame Langstroth, telescope covers. I nailed the caps down with 8-penny nails, and nailed the hive at each corner to the bottom-board. I nailed with 8-ounce tacks a strip of wire-cloth across the entrance, cutting it 3 inches

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wide, and long enough to reach across the hive front, bent in and tacked well. Be sure on that point. Next I set the hives on the two pieces of 2x4 and nailed them at three of the corners with 8-penny wire nails, leaving the nails up about $\frac{1}{8}$ inch. I could not get at the fourth corner to nail that. Then I put two other pieces of 2x4 across the hives, nailing them at the end and toe-nailing them to the caps. In that manner I placed 84 colonies in one end of a box-car, putting 2x4's on the top of the last and then piling empty supers, etc., on top of the whole of them. I then took some 2x6 and put them across the car against the ends of the whole lot, spiking them solid, three of them straight and one across, making the whole solid. I will say right here, that they must be made so they cannot move, or else all is lost.

In the other end of the car I had household goods, and nailed boards across to keep them from moving. Well, those boards lasted just until the train, or rather the engine, ran off the track, then the engineer stopped the train with the air-brakes, and those boards broke like matches.

Another thing: Put the bees in the front end of the car, if you don't have more than $\frac{1}{2}$ carload, as the sudden stops throw the stuff in the car towards the front end oftener than the other way.

I had all ready for 7 or 8 days, waiting for a car, then it took 7 full days to come 1644 miles by rail, and the next day to get them out of the car, so it was 16 or 17 days from the time the hives were nailed up until they were opened, when I found just 2 of the combs broken out of the frames, and two other hives had the comb bruised so the honey leaked out some, but not broken. One colony swarmed out, but clustered on the side of their hive, and I put them back and they stayed there.

I live about 7 miles from where I have my bees; I went down there yesterday, and they were flying out a good deal, and seem all right to-day. I went west from here, to Outlook, to see a man that has about 150 colonies of bees, and they were flying a good deal. There are quite a number of bees in this vicinity, but most of them are farmer's bees, and the owners don't know or care to take much care of them. I found one bee-keeper who does not claim to spend much time with his bees, but he knows that he can make it pay to handle them, as he reads bee papers and books.

I had to smile while reading Dr. Miller's experience in the days when he was trying to keep bees at a distance, or at long range, as I had tried something in that line myself. I came out here (from central Minnesota) on account of the cold winters. We have not had any winter here yet: the coldest was Thanksgiving week, about 16 to 22 degrees above zero, but the rest of the time it has been mostly 28 to 35 degrees or warmer. We have had a good deal of foggy, cloudy weather during November and December and the first week in January. There is a great deal of alfalfa raised here, the only trouble being that they cut it almost too soon for the honey crop.

Bees are left out on the summer stands all the time here, and no complaint about winter loss.

CHAS. W. SAGER.

Yakima Co., Wash., Jan. 13.

Bee-Keeping in North Dakota.

The American Bee Journal comes along on time and in good shape, and has been a great help to me in the management of bees. I have kept a few colonies for a number of years. With the Journal I can without fail make a success of them through all seasons of the year, winter excepted!

I have put away for the past 6 years, from 10 to 20 colonies, in a bee-house above ground, built the best way I knew how to resist the severe winter of North Dakota. My losses were heavy, only saving about 2 out of every 10 or 12. Last winter I put 3 in the house-cellar to try results; 2 came out fairly good, one poor. The 9 I put in the bee-house all died.

I had grand success in building up these 3, thanks to the American Bee Journal for its guiding staff of writers, giving practical experience. I took them out of the cellar about



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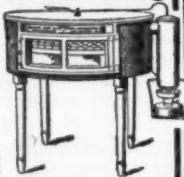
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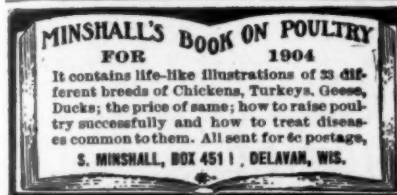
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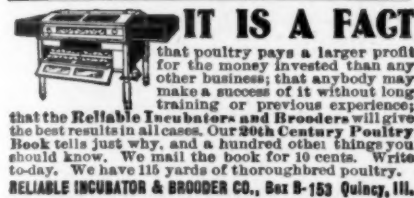
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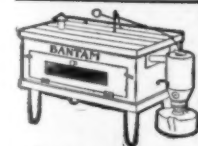
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April 6 or 8; having plenty of comb honey, I gave them all they needed, and blanketed them well to maintain the heat by manipulating the brood in the brood-nest, and putting another hive on the top filled with comb, and a queen-excluder between; likewise at times lifting up from below frames of brood to top of hive, they became extra strong in bees. The next move was to divide the colony in two. Placing an empty hive a little to one side of the old hive, then opening the hive and searching for the queen, placing the frames she was on in the new hive, then 2 more frames with brood and bees, filling the rest of the space with empty worker-combs taken from the upper hive and a frame with honey. Next I moved the mother hive 6 or 8 inches to the other side, got all the brood gathered to the center, and filled up with the rest of the empty worker-comb. They soon equalized in number of bees nicely. I had sent for a select queen, but being long in coming they had commenced and built queen-cells; I was sure they would kill the new queen, but I cut all the cells out in the morning and after sundown I gave them a good smoking, and in about a half an hour I placed my new queen (in cage) in the center of the brood-frames, just moving the frames apart a little, so I could get the cage dropped in. I tied a cord to the cage so it did not drop too far, and closed up the hive. In about 30 hours I opened it and found the queen out, moving around quietly, and the bees seemed to be well pleased as I was. I soon had 2 strong colonies ready for top supers again, and the honey-flow at hand. I bought in all 4 queens, and used them in like manner, and to get some honey and keep them from swarming I keep the extractor going. I had a lot of empty combs to work on.

The middle of September I adjusted them for winter quarters, seeing they had plenty of honey, leaving them to gather more if they could, and fix up housekeeping for the winter.

About Nov. 8 I put into the house-cellar 10 good colonies and one nucleus, all having good queens, and 2 colonies into a bee-house, trying an experiment again. I cut 2 holes in the south side of the house, put a 2-inch pipe of wood through the wall 18 inches, set the hive-entrance to the end of the pipe, then covered the hive with sacking cloth, and over all with 2 or 3 feet of flax straw. I enclosed the entrance outside with a slide door, and for fear of cold (30 or 40 below zero) I filled the pipe with rags. I may tell later how they came out.

About the surplus honey; I had over 300 pounds, and can sell it at 10 cents a pound. Don't you think I got along well? They kept so strong in number of bees. It took sharp work to keep them from swarming; however, I do not think it is the fault of the bees that they swarm against the bee-keeper's will. Give them room, and care, and there will be very little swarming.

Thanks to the writers of the Journal for pointers about how and when to give empty comb, and better, worker foundation frames in the center of the brood-nest. After all said, I had 2 swarms come off, one did well, but the other left, and I do not know where it went. I would say here, treat the new swarms with a clean, sweet hive and fill with comb or foundation, and a little brood or young larvæ, and lots of shade from the heat of the sun, and they will never think of skipping.

Some one may ask where I got all the colonies I put into the cellar. Well, this way: When I ran across a fine, large queen-cell I would cut it out and put it into a frame of brood—just cut a hole with a pen-knife in the comb and push the cell in it, then place in the parent hive until the queen would be hatched and fertilized, then in a nucleus and build that up with frames of brood. Soon I had a strong colony, yes, and plenty of honey for winter use.

Dr. Miller has my thanks for the many pointers he has given me. I see that he keeps his end well up in the many conventions. May the worthy Doctor live until he is 100 years old—I was going to say, to help us poor fellows out in the bee-business. Well, that is too selfish altogether. But may he live to serve his Savior and God, in leading precious souls to the fold.

If he has any time to spare I would like to

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Tells all about Bees in California. The yields and Price of Honey; the Pasturage and Nectar-Producing Plants; the Bee-Ranches and how they are conducted. In fact the entire field is fully covered by an expert bee-man. Besides his the paper also tells you all about California Agriculture and Horticulture. \$1.00 per year; 6 months, 50 cents. Sample copies, 10 cents.

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Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey racks, 500 brood-frames, 2,000 honey boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

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kills all lice and mites. No injury to birds or feathers. Handles any fowl, smallest chick to largest gobbler. Made in three sizes. Pays for itself first season. Also **Lightning Lice Killing Powder**, Poultry Lice, Lice Murder, etc. We secure special low express rates. Catalog mailed free. Write for it. **CHARLES SCHILD, Ionia, Mich.**

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Please mention Bee Journal when writing

wide, and long enough to reach across the hive front, bent in and tacked well. Be sure on that point. Next I set the hives on the two pieces of 2x4 and nailed them at three of the corners with 8-penny wire nails, leaving the nails up about $\frac{1}{2}$ inch. I could not get at the fourth corner to nail that. Then I put two other pieces of 2x4 across the hives, nailing them at the end and toe-nailing them to the caps. In that manner I placed 84 colonies in one end of a box-car, putting 2x4's on the top of the last and then piling empty supers, etc., on top of the whole of them. I then took some 2x6 and put them across the car against the ends of the whole lot, spiking them solid, three of them straight and one across, making the whole solid. I will say right here, that they must be made so they cannot move, or else all is lost.

In the other end of the car I had household goods, and nailed boards across to keep them from moving. Well, those boards lasted just until the train, or rather the engine, ran off the track, then the engineer stopped the train with the air-brakes, and those boards broke like matches.

Another thing: Put the bees in the front end of the car, if you don't have more than $\frac{1}{2}$ carload, as the sudden stops throw the stuff in the car towards the front end oftener than the other way.

I had all ready for 7 or 8 days, waiting for a car, then it took 7 full days to come 1644 miles by rail, and the next day to get them out of the car, so it was 16 or 17 days from the time the hives were nailed up until they were opened, when I found just 2 of the combs broken out of the frames, and two other hives had the comb bruised so the honey leaked out some, but not broken. One colony swarmed out, but clustered on the side of their hive, and I put them back and they stayed there.

I live about 7 miles from where I have my bees; I went down there yesterday, and they were flying out a good deal, and seem all right to-day. I went west from here, to Outlook, to see a man that has about 150 colonies of bees, and they were flying a good deal. There are quite a number of bees in this vicinity, but most of them are farmer's bees, and the owners don't know or care to take much care of them. I found one bee-keeper who does not claim to spend much time with his bees, but he knows that he can make it pay to handle them, as he reads bee papers and books.

I had to smile while reading Dr. Miller's experience in the days when he was trying to keep bees at a distance, or at long range, as I had tried something in that line myself. I came out here (from central Minnesota) on account of the cold winters. We have not had any winter here yet: the coldest was Thanksgiving week, about 16 to 22 degrees above zero, but the rest of the time it has been mostly 28 to 35 degrees or warmer. We have had a good deal of foggy, cloudy weather during November and December and the first week in January. There is a great deal of alfalfa raised here, the only trouble being that they cut it almost too soon for the honey crop.

Bees are left out on the summer stands all the time here, and no complaint about winter loss.


CHAS. W. SAGER.
Yakima Co., Wash., Jan. 13.

Bee-Keeping in North Dakota.


The American Bee Journal comes along on time and in good shape, and has been a great help to me in the management of bees. I have kept a few colonies for a number of years. With the Journal I can without fail make a success of them through all seasons of the year, winter excepted!


I have put away for the past 6 years, from 10 to 20 colonies, in a bee-house above ground, built the best way I knew how to resist the severe winter of North Dakota. My losses were heavy, only saving about 2 out of every 10 or 12. Last winter I put 3 in the house-cellar to try results; 2 came out fairly good, one poor. The 9 I put in the bee-house all died.

I had grand success in building up these 3, thanks to the American Bee Journal for its guiding staff of writers, giving practical experience. I took them out of the cellar about



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SALZER'S NATIONAL OATS

Greatest Oats of the century, yielding in forty States from 130 to 300 bushels per acre. Every farmer in America can have such yields in 1904. Salzer positively guarantees this. Often 80 strong, heavily laden stocks from one kernel of seed! That is the secret of its enormous yield. Straw strong, stiff, stands like a stone wall. It is positively the greatest Oats of the last hundred years.

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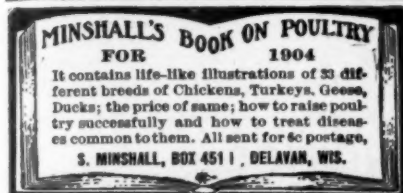
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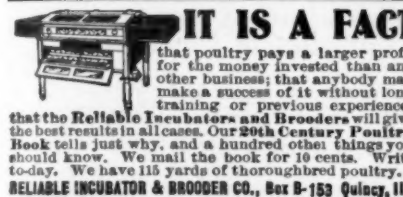
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Send for our **FREE CATALOG**. It will tell you how to put foundation in four sections at once; and the only way to get a full section of honey.

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Let us quote you prices on Sections, Hives, Foundation, etc., as we can save you time and freight. Four percent off for cash orders in December.
M. H. HUNT & SON,
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April 6 or 8; having plenty of comb honey, I gave them all they needed, and blanketed them well to maintain the heat by manipulating the brood in the brood-nest, and putting another hive on the top filled with comb, and a queen-excluder between; likewise at times lifting up from below frames of brood to top of hive, they became extra strong in bees. The next move was to divide the colony in two. Placing an empty hive a little to one side of the old hive, then opening the hive and searching for the queen, placing the frames she was on in the new hive, then 2 more frames with brood and bees, filling the rest of the space with empty worker-combs taken from the upper hive and a frame with honey. Next I moved the mother hive 6 or 8 inches to the other side, got all the brood gathered to the center, and filled up with the rest of the empty worker-comb. They soon equalized in number of bees nicely. I had sent for a select queen, but being long in coming they had commenced and built queen-cells; I was sure they would kill the new queen, but I cut all the cells out in the morning and after sundown I gave them a good smoking, and in about a half an hour I placed my new queen (in cage) in the center of the brood-frames, just moving the frames apart a little, so I could get the cage dropped in. I tied a cord to the cage so it did not drop too far, and closed up the hive. In about 90 hours I opened it and found the queen out, moving around quietly, and the bees seemed to be well pleased as I was. I soon had 2 strong colonies ready for top supers again, and the honey-flow at hand. I bought in all 4 queens, and used them in like manner, and to get some honey and keep them from swarming I kept the extractor going. I had a lot of empty combs to work on.

The middle of September I adjusted them for winter quarters, seeing they had plenty of honey, leaving them to gather more if they could, and fix up housekeeping for the winter. About Nov. 8 I put into the house-cellar 10 good colonies and one nucleus, all having good queens, and 2 colonies into a bee-house, trying an experiment again. I cut 2 holes in the south side of the house, put a 2-inch pipe of wood through the wall 18 inches, set the hive-entrance to the end of the pipe, then covered the hive with sacking cloth, and over all with 2 or 3 feet of flax straw. I enclosed the entrance outside with a slide door, and for fear of cold (30 or 40 below zero) I filled the pipe with rags. I may tell later how they came out.

About the surplus honey; I had over 200 pounds, and can sell it at 10 cents a pound. Don't you think I got along well? They kept so strong in number of bees. It took sharp work to keep them from swarming; however, I do not think it is the fault of the bees that they swarm against the bee-keeper's will. Give them room, and care, and there will be very little swarming.

Thanks to the writers of the Journal for pointers about how and when to give empty comb, and better, worker foundation frames in the center of the brood-nest. After all said, I had 2 swarms come off, one did well, but the other left, and I do not know where it went. I would say here, treat the new swarms with a clean, sweet hive and fill with comb or foundation, and a little brood or young larvae, and lots of shade from the heat of the sun, and they will never think of skipping.

Some one may ask where I got all the colonies I put into the cellar. Well, this way: When I ran across a fine, large queen-cell I would cut it out and put it into a frame of brood—just cut a hole with a pen-knife in the comb and push the cell in it, then place in the parent hive until the queen would be hatched and fertilized, then in a nucleus and build that up with frames of brood. Soon I had a strong colony, yes, and plenty of honey for winter use.

Dr. Miller has my thanks for the many pointers he has given me. I see that he keeps his end well up in the many conventions. May the worthy Doctor live until he is 100 years old—I was going to say, to help us poor fellows out in the bee-business. Well, that is too selfish altogether. But may he live to serve his Savior and God, in leading precious souls to the fold.

If he has any time to spare I would like to

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| Modern Farmer |\$0.50 |
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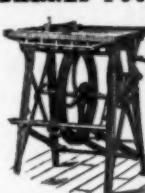
The Rural Californian

Tells all about Bees in California. The yields and Price of Honey; the Pasturage and Nectar-Producing Plants; the Bee-Ranches and how they are conducted. In fact the entire field is fully covered by an expert bee-man. Besides his the paper also tells you all about California Agriculture and Horticulture. \$1.00 per year; 6 months, 50 cents. Sample copies, 10 cents.

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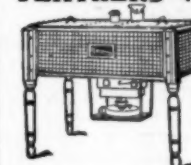
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get a few pointers on cellar-wintering of bees. This is the sore question. I am pleased with his advice on the sweet clover question; it does well here, grows immensely, blooms so long, and the bees seem to be on it all of the time. It is well to have the yellow and the white; the yellow will be in bloom 2 weeks earlier here than the white.

Another little wrinkle I tried for warmth in spring and fall, was to make an oil-cloth Take factory cotton (6 cents a yard) large enough to cover the hives all over, less a few inches at the entrance. Heat the boiled linseed oil and with a paint-brush put it on the cloth. When dry, put it on the hive, tie with a piece of twine, and put a stone on top, to keep the cover on. Indeed, I keep it on all summer; no driving rain reached the combs of bees.

ROBERT MCCRADIE.
Norman Co., Minn., Dec. 26.

CONVENTION NOTICES.

Utah.—The spring convention of the Utah Bee-Keepers' Association will be held April 5, at 10 a.m. and 4:30 p.m. Among other important questions to be considered will be the World's Fair, our State Fair, and the Portland Fair of 1905. We also desire to formulate some plan, if possible, to further increase the fraternal interest for the mutual benefit of our bee-keepers. We cordially invite all bee-keepers to be present. We also invite them without delay to send in their views on these and other topics. The convention will be held in the City and County building, in Salt Lake City.

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The Certain, Pleasant, Quick and Permanent cure for diseases of Lungs, Heart and Nervous System. Full particulars on application.

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Dept. 314.

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Called the poor man's hive. Either 8 frame or 10. Sections sold at last year's prices. Full line of **SUPPLIES**. Subscription to bee-journals with orders. Send for list.

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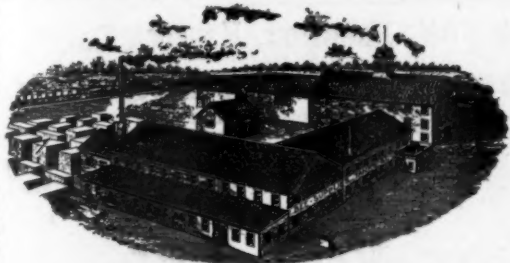
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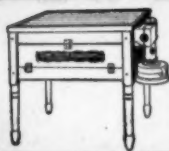
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HONEY AND BEESWAX**MARKET QUOTATIONS**

CHICAGO, Jan. 8.—The new year opens with a quiet trade in honey, retailers having usually a supply from the stock laid in to make a good show at the holiday time. Prices are without essential change in No. 1 to fancy comb, which brings about 13c; very little doing in off grades at from 1@3c less. Extracted, white grades, bring from 6@7c, according to flavor and other qualities; ambers about 1c less; especially weak are those lacking in flavor and body. Beeswax steady at 28@30c.

R. A. BURNETT & CO.

CINCINNATI, Jan. 8.—The market on comb honey has weakened, as the supply has been larger than the demand. Fancy water-white, 14c; off grades, lower. Extracted, amber, in barrels, 5½@5¾c; in 60-lb. cans, ¾c more; alfalfa, water-white, 6@6¼c; fancy white clover, 7@8c. Beeswax, good demand; 30c for nice.

C. H. W. WEBER.

PHILADELPHIA, Jan. 13.—There has been very little call for honey since the holidays. The first two weeks of the year are the duller during the season; people become somewhat surfeited with sweets, lessening the demand. The market is somewhat weaker, with quite a few arrivals. We quote fancy comb at 15@16c; No. 1, 13@14c; amber, 12c. Extracted, white, 7½@8c; amber, 6@7c. Beeswax, 31c. We are producers of honey and do not handle on commission.

WM. A. SELSER.

CINCINNATI, Jan. 25.—The demand for honey shows little life at the present time. Have an ample supply, although we are looking for a revival of trade in the near future. Prices are declining, owing to the superfluous quantity in this country. We are selling amber extracted in barrels at 5½@6c; white clover, 6½@8c, according to quality. Fancy comb honey selling slow at 14@15c. Beeswax, good demand, at 30c.

THE FRED W. MUTH CO.

ALBANY, N. Y., Feb. 1.—Honey demand very light. Prices of comb honey are largely now what the buyers will offer—from 10@15c. We look for better demand when weather is warmer. Extracted doing some better at 7c for white, 6½c for mixed, and 5½@6c for dark and buckwheat. Beeswax, 28@30c.

H. R. WRIGHT.

BOSTON, Dec. 21.—The demand for honey continues good, with an ample supply of comb, and a light supply of extracted. We quote our market as follows: Fancy white comb, 16@17c; No. 1, 14@15c; and practically no No. 2 to offer. Extracted, 7@8c, as to quality.

BLAKE, SCOTT & LEE.

KANSAS CITY, Jan. 28.—There is very little change to note in our honey market since our last report. The supply is still large and the demand fair. We quote: Fancy white comb, 24-section cases, \$2.60; No. 1, \$2.50; No. 2, \$2.40. Extracted, white, per pound, 7c; amber, 6@6¼c. Beeswax, 25@30c.

C. C. CLEMONS & CO.

NEW YORK, Dec. 4.—Comb honey is arriving in sufficient quantities to supply the demand, and, as to the quality, most of the white honey seems to be off color, more or less. We quote fancy white at 14c; No. 1 at 13c; amber, 11@12c; and buckwheat, 10c. Extracted, light amber, at 6c; white, 6½c; Southern, 55@60c per gallon; buckwheat, 5½c. Beeswax, 28@29c.

HILDRETH & SEGELKEN.

SAN FRANCISCO, Jan. 20.—White comb, 1-lb. frames, 12½@13c; amber, 9@11c. Extracted, white, 5½@6c; light amber, 4½@5c; amber, 4@4½c; dark amber, 3½@4c. Beeswax, good to choice, light, 27½@29c; dark, 25@26c.

Values are showing steadiness, but the demand is slow. There are complaints of doctored or adulterated honey being foisted on the market and interfering with the sale of the pure article.

HONEY AND BEESWAX

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L. C. & A. G. Woodman, Grand Rapids, Mich.
Fred W. Muth & Co., Cincinnati, Ohio, 51 Walnut St.
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